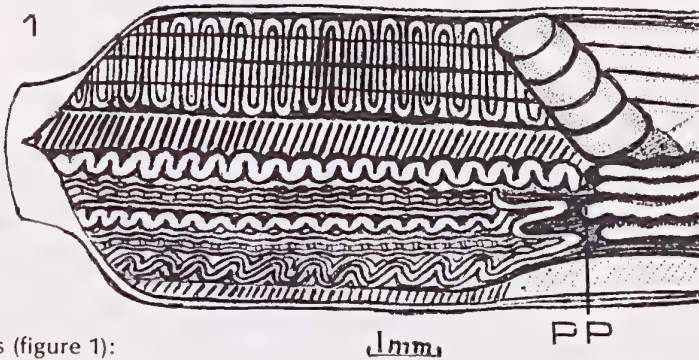


Notes on *Helicarion rubicundus* (Pulmonata : Helicarionidae)

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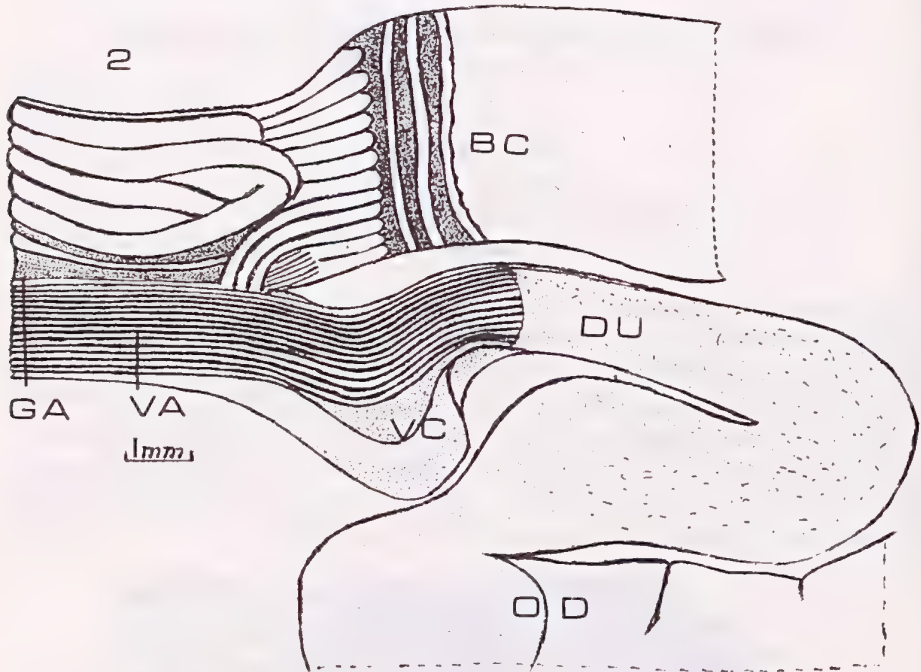
Study of *Helicarion* genitalia has emphasized the need for dissection and study of the micro-structure in detail. It has been apparent that the description of the penis and bursa copulatrix duct in *Helicarion rubicundus* Dartnall & Kershaw, 1978 is inadequate for comparative purposes. In addition the penial papilla is incorrectly described as a verge. It is compound, and not the simple digitiform structure shown in the figured section. The species is described as possessing a retractor caecum which was thought to be degenerate. Further study has shown this structure to be simply the bulging, sometimes unusually shaped base of the retractor muscle, and is not in fact a caecum. The retractor muscle base has various differences in structure in the genus, ranging from very simple to the complex as in this instance. In no case has a true caecum been found.



The penis (figure 1):

The original description of the internal structure (Dartnall & Kershaw, 1978, p.4) refers to lamellate transverse ridges. This arose from the appearance as revealed by a simple longitudinal section. The technique of sectioning the penis to reveal the whole internal surface as figured here, indicates the important differences observed. The structure consists, of longitudinally oriented transverse folds with short, minor transverse ridges, accentuating the effect. The broad tight folds noticeable in the figure are slit into longitudinal rows of papillae. These are apparent when the penis is everted. The complexity of the ornament is increased by the presence of very low close slightly wavy ridges between the bold folded ridges. The central pair in each case is joined transversely at frequent intervals.

The penial papilla complex consists of four contorted digitiform processes the most prominent of which is raised into the small rounded bulge originally observed. This bulge is separated from the wall of the penis and is regarded as the stimulatory part of the papilla. A relatively large segmented ridge is situated diagonally adjacent to the papilla. The function of this structure or how often it is present is not known. It occupies a situation similar to that of tight lines of papillae or ridges observed in certain other morphs. It may have some stimulatory function and may be essentially similar to but lacking the discrete divisive structure encountered in the morphs mentioned.



The bursa copulatrix duct (figure 2).

The bursa copulatrix has not been adequately described. The duct is described as possessing a small vestibule which is due to the broadening and flattening of the initial pilaster ridges. These are curiously and uniquely curved at this point. The following series of ridges tend to radiate, almost fan-like, into the bursa chamber entrance. The longitudinal vaginal ornament is in fact very closely lamellate in structure. It enters a region since described as a vaginal chamber which, at least in part, includes a small diverticulum. The ornament then passes into the uterine duct. In this species as originally noted, this duct has a unique convolution still unobserved in any other morph.

Abbreviations used:

DU uterine duct, BC bursa copulatrix, GA genital atrium, OD spermatiduct complex, PP penial papilla, VA vagina, VC vaginal chamber.

REFERENCE

Dartnall, A.J. & R.C. Kershaw, 1978. Description of a new species of *Helicarion* (Stylommatophora : Helicarionidae) in Tasmania. *Rec. Queen Vict. Mus.* 62 : 1-18, pls. 1-5.